TOWARDS INDUSTRIAL DECARBONISATION AND SUSTAINABILITY: AN OECD PERSPECTIVE

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BETTER POLICIES FOR BETTER LIVES

Structure of the presentation

- Introducing the OECD
- Industrial Decarbonisation
- Three deep dives:
  - Heterogeneity of steel decarbonisation pathways
  - A life cycle perspective on shipbuilding
  - No net zero without SMEs

The OECD: Who we are

- International Organisation
  - 38 member countries
  - over 3500 staff
  - HQ in Paris
- Evidence based analysis for better policy making
- Standard setting
- Wide variety of subjects

OECD: How we work

- **Committees** with member state representatives (Steel Committee, Environmental Policy Committee etc.)
- Participation **civil society** and **industry**
- Participation **non-members**
- Supporting **global initiatives** (G20, G7 etc)
- Interim secretariat **Climate Club** (with IEA)

The need for industrial decarbonisation

- Industry accounts for a **quarter of global CO2 emissions** and **10-15% of global energy use**
- Industry decarbonisation is **progressing**…
- …but not fast enough to reach Paris climate objectives
- Industrial decarbonisation faces various **challenges**…
- …that differ by country, sector and firm type
- These challenges can only be overcome by boosting **innovation**…
- …and by strengthening **global cooperation**

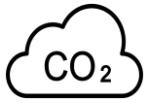
OECD work on industrial decarbonisation

- Sectoral analysis: Steel
  - Steel Decarbonisation Dashboard
- Sectoral analysis: Shipbuilding
  - Ship recycling
- Framework for evidence-based industrial decarbonisation policies
  - Policies for a climate-neutral industry : Lessons from the Netherlands | OECD Science, Technology and Industry Policy Papers | OECD iLibrary (oecd-ilibrary.org)
- Quantifying industrial and transition policies
  - Quantifying industrial strategies across nine OECD countries | en | OECD
- Framework for industry's net-zero transition
  - Framework for industry's net-zero transition: Developing financing solutions in emerging and developing economies | en | OECD
- Various projects on hydrogen
  - Innovation and industrial policies for green hydrogen | OECD Science, Technology and Industry Policy Papers | OECD iLibrary (oecd-ilibrary.org)
- Regional industrial transitions to climate neutrality
  - Regional Industrial Transitions to Climate Neutrality | en | OECD
- Specific focus on SMEs
  - No net zero without SMEs: Exploring the key issues for greening SMEs and green entrepreneurship | en | OECD

Deep dive 1: Steel Decarbonisation

Steelmaking countries face common challenges to decarbonise

STEEL & EMISSIONS



8% of global emissions,
30% of global industrial emissions

More than **90%** of global **capacity** in **countries** with **Net-Zero targets**

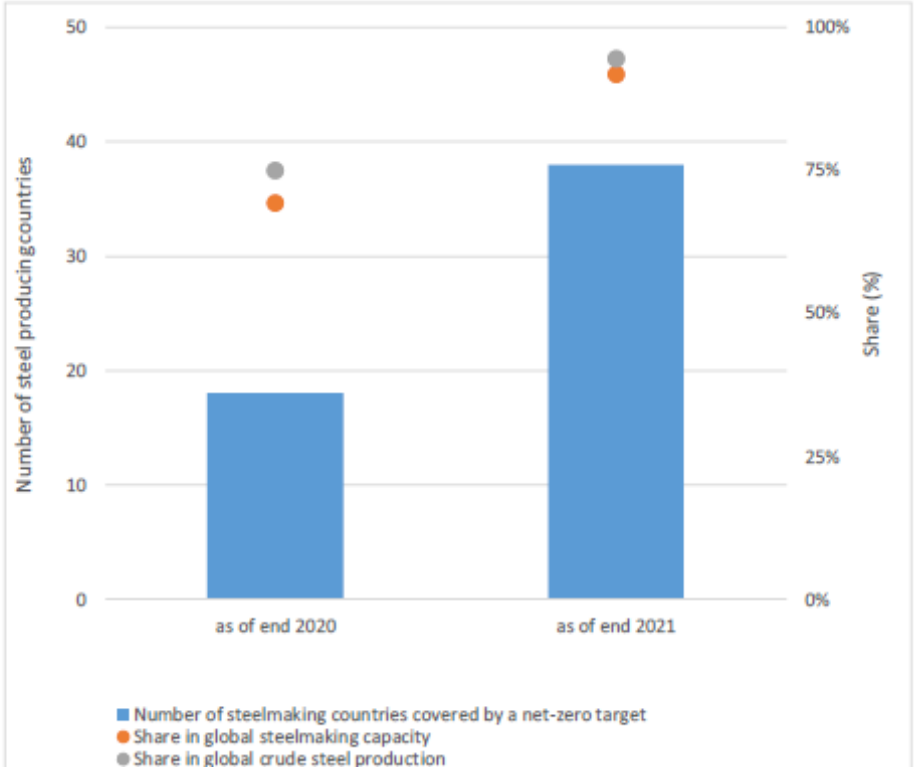
A CRITICAL DECADE FOR IMPLEMENTATION

A Deep **Transformation** Required

Multiple **Challenges**
(Technology, Investments, Competitiveness, Strategic Inputs, Market, Social…)

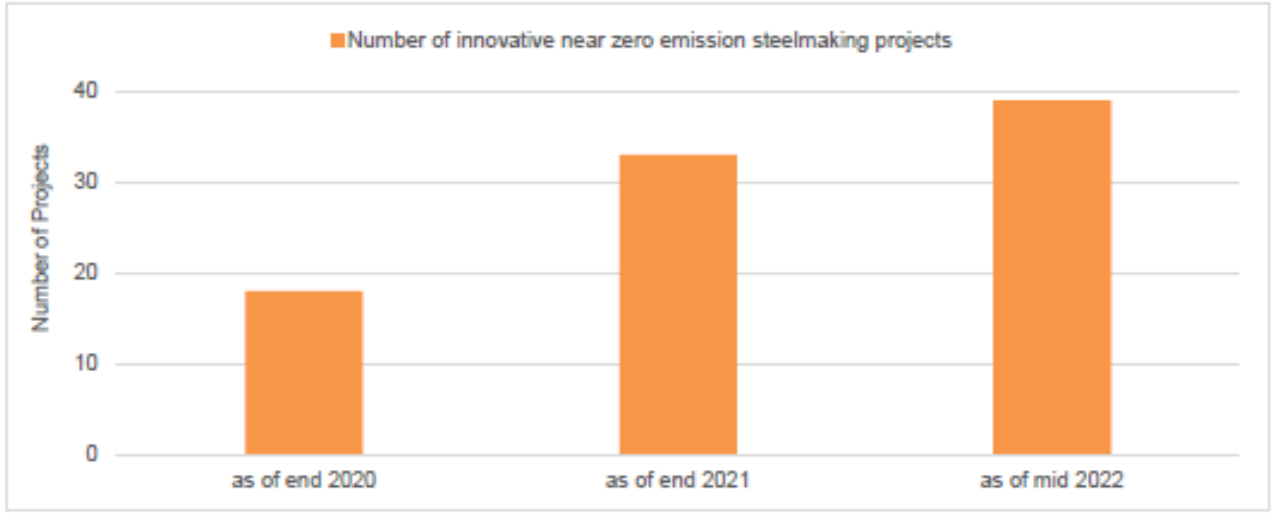
Progress is made in addressing these challenges…

Figure 8. Number of steel producing countries covered by a net-zero target – Related share in global steelmaking capacity / production



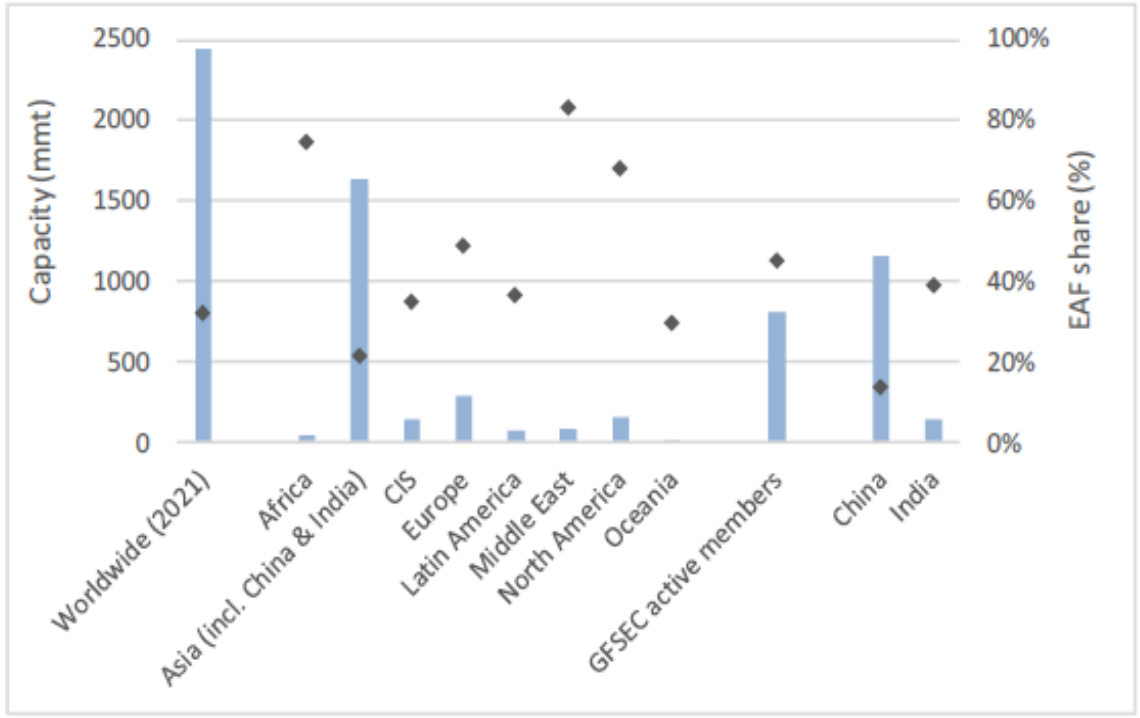
- Almost all global **steelmaking capacity** is located in countries that have announced **net-zero targets**
- Sharp increase in low carbon emission **steel projects**

Figure 8. Number of innovative near zero emission steelmaking projects

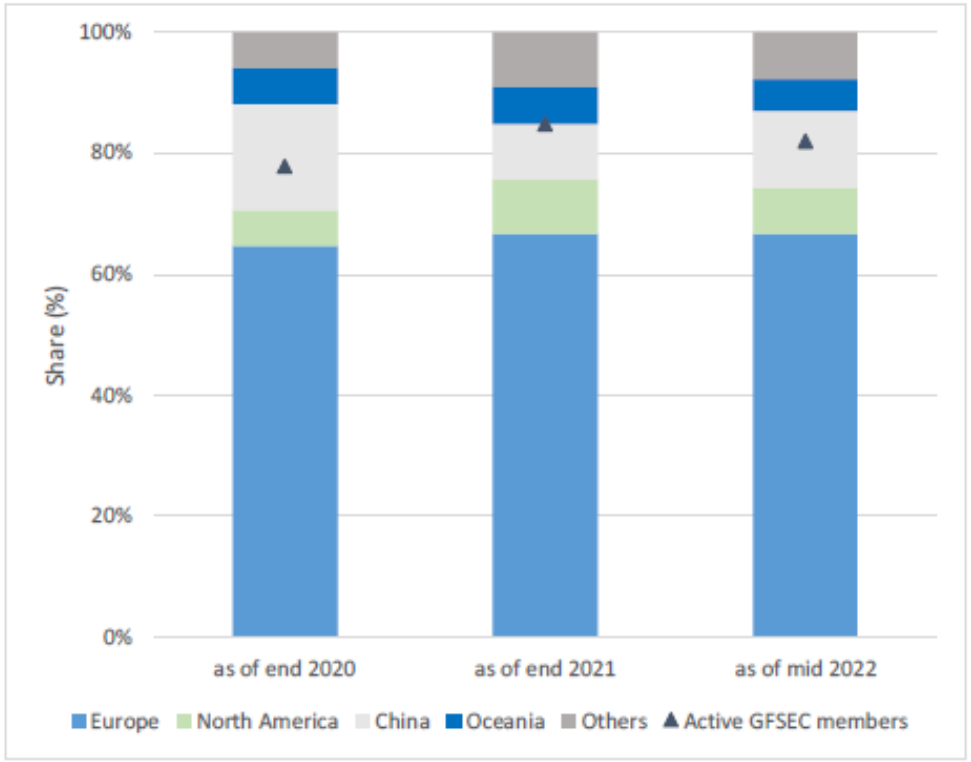


…but differs by country

Figure 20. Steelmaking capacity and related share of EAF – Regional breakdown



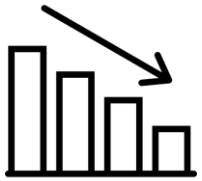
Innovative near zero emission steelmaking projects – Regional breakdown



Different Decarbonisation Pathways: Understanding Heterogeneity

[The Heterogeneity of Steel Decarbonisation Pathways | en | OECD]

Achieve **climate goals,** as multiple mitigation options are needed

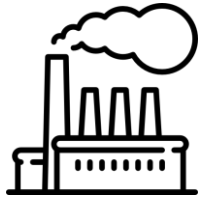


Acknowledge **national circumstances**

(including uneven access to resources)

Considering **Heterogeneity** is crucial to…

Ensure **inclusiveness,** fostering collaboration & a level playing field



Leverage the multiple decarbonisation efforts of the **steel industry**

Key Aspects of Heterogeneity

Assets Characteristics
Capacity, type, performance…

- Capacity developments
- Crude steel production process
- Direct Reduced Iron (DRI) production
- Age of assets

Inputs for Production
Raw materials & energy sources

- Scrap availability
- Electricity price
- Low carbon power generation
- Import dependencies

Market & Business Environment
Types of products, exports, companies…

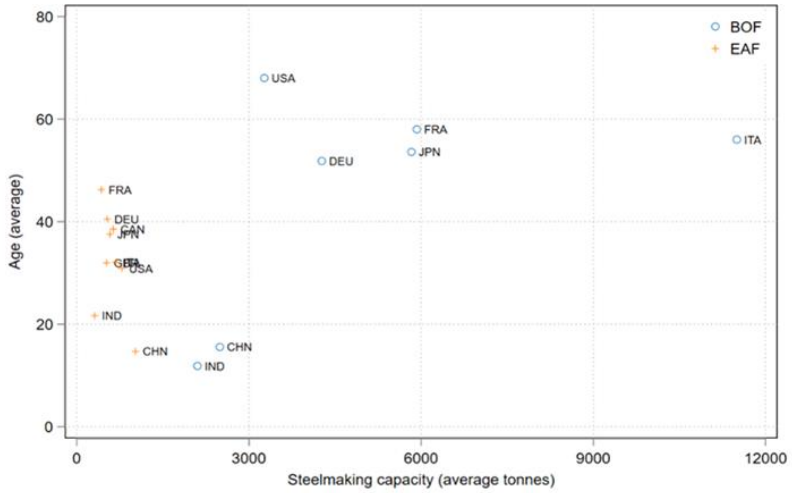
- Fragmentation
- Export orientation
- Direction of export/imports
- Export specialization
- Profitability

Innovation
R&D, patents…

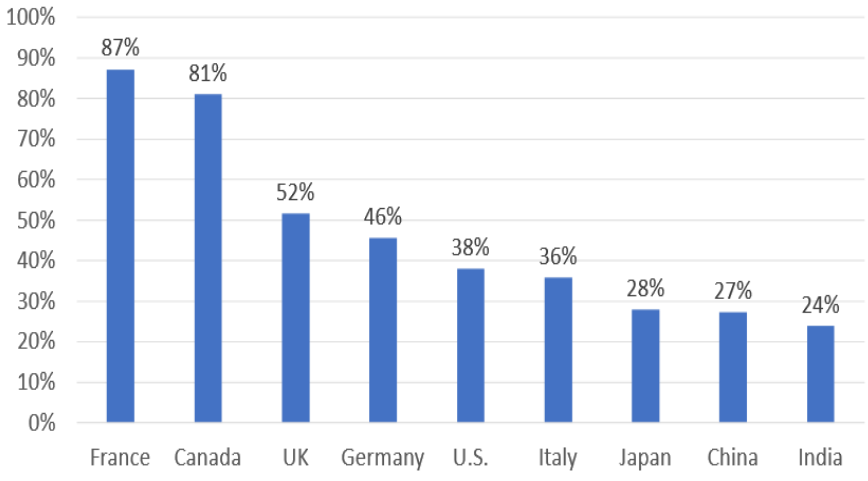
- Patents
- Hydrogen work in progress
- CCU/S work in progress

Example of Indicators

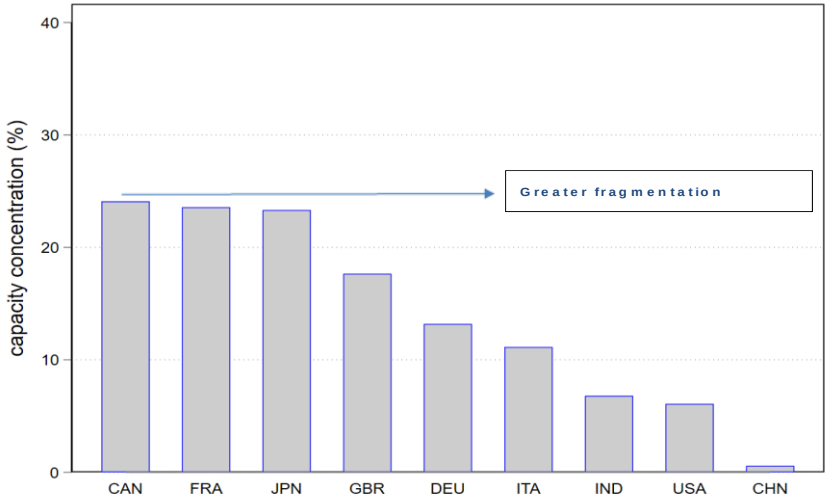
Assets Characteristics
- **Age of assets**



Inputs for Production
- **Low carbon power generation**



Market & Business Environment
- **Fragmentation**



The indicators show the diversity of the steel industry reflecting the different circumstances of each economy

Table 2: Summary of heterogeneity indicator analysis

Summary of findings indicator analysis

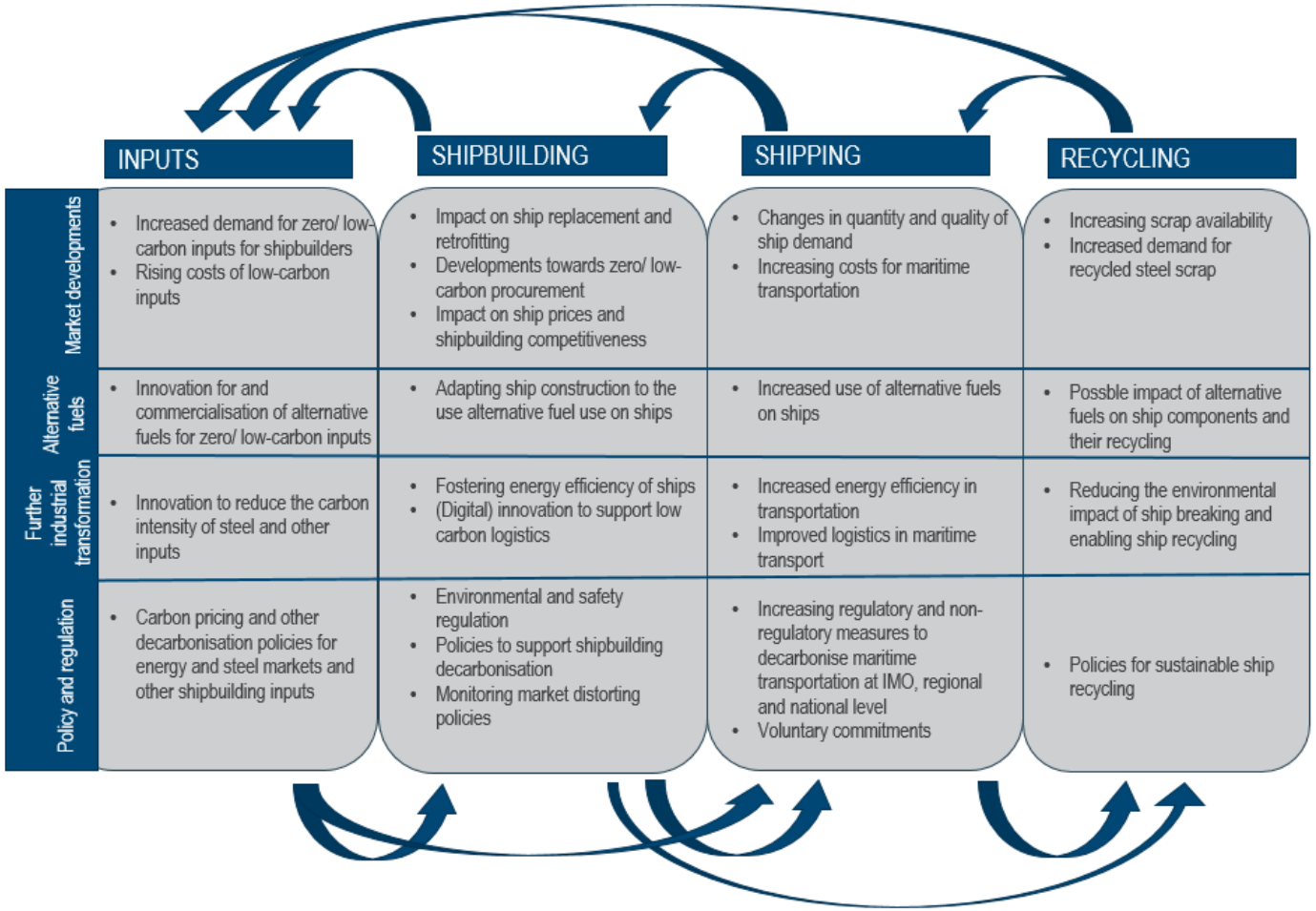
Heterogeneity aspect	Indicator	Canada	France	Germany	Italy	Japan	UK	U.S.	China	India	Note
Assets Characteristics	Crude steelmaking capacity (2022)	Low	Low	Low	Low	Medium	Low	Medium	High	Medium	Figure 3
	Crude steelmaking capacity growth from 2000 to 2022	Low	Low	Low	Low	Low	Low	Low	High	Medium	Figure 3
	Share of BOF by process of crude steel production (2021)	Medium	Medium	Medium	Low	High	High	Low	High	Low	Figure 4
	DRI production	Low	Low	Low	Low	Low	Low	Medium	Low	High	Figure 5
	Average age of BOF	-	Medium	Medium	Medium	Medium	-	High	Low	Low	Figure 6
	Average age of EAF	High	High	High	Medium	High	Medium	Medium	Low	Low	Figure 6
Inputs for Production	Electricity price	Low	Medium	High	-	High	High	Low	-	-	Figure 8
	Low carbon power generation	High	High	Medium	Low	Low	Medium	Medium	Low	Low	Figure 9
	Import dependencies (Iron ore)	Medium	High	High	High	High	High	Low	Medium	Low	Figure 10
	Import dependencies (Coking coal)	Low	High	High	High	High	Medium	Low	Low	Medium	Figure 10
	Import dependencies (Scrap)	High	High	High	High	Low	Medium	Medium	Low	-	Figure 10
Market & Business Environment	Fragmentation	High	High	Medium	Medium	High	Medium	Low	Low	Low	Figure 11
	Export orientation	Medium	High	High	High	Medium	Medium	Low	Low	Low	Figure 12
Innovation	Patents	Low	Low	Medium	Low	High	Low	Medium	Low	Low	Figure 16
	CCS readiness	High	Medium	Medium	Medium	Medium	High	High	Medium	Low	Figure 18

Deep dive 2: Shipbuilding

- The shipping industry is responsible for approximately **2.8% of global greenhouse gas emissions**
- Much of the policy focus in decarbonizing the industry is on **maritime transport** and fostering availability of alternative fuel sources
- The **shipbuilding and marine equipment industries** are key in enabling this transition, and in foster more energy efficient vessel design and retrofitting energy saving technologies
- Policies need to take barriers and opportunities in the construction and design phase of vessels better into account in enhancing maritime decarbonisation

Importance of shipbuilding to decarbonising the maritime value chain

A life-cycle approach to decarbonisation of the shipbuilding industry



Source: OECD (2023)

Ship technology developments

- '**Twin Transition**' of digitalisation and decarbonisation
- 25% global fleet have **energy efficiency technology**, 30% 'eco' engine (in 2023)
- Key challenge is uptake of **alternative fuels**: 5% of fleet but 65% of global tonnage ordered (in 2023)
- **Uncertainty** in market and ship owners 'sitting on the fence'
- **Shipbuilders** essential role: uptake in shipyards delivering alternativeofuelled ships

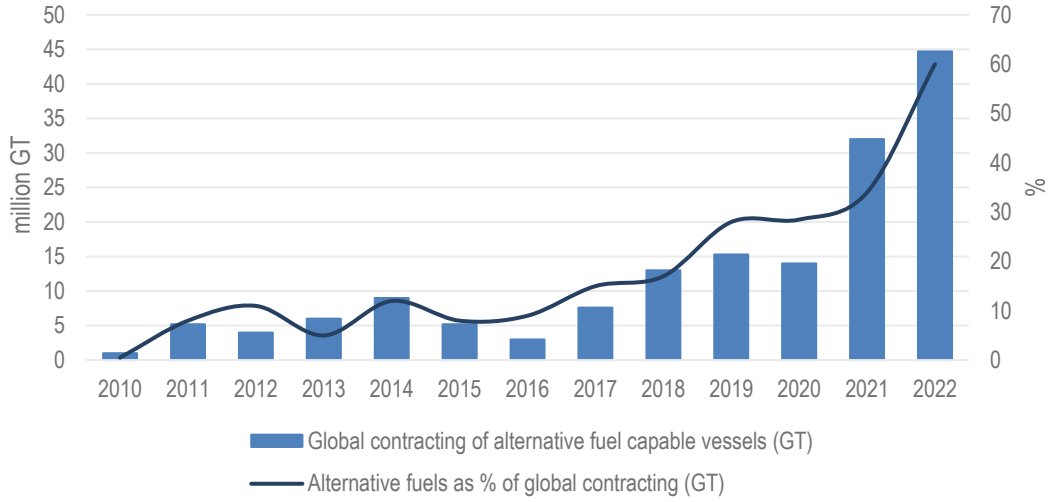


Figure 2. Contracting of alternative fuel capable vessels, from 2010 to 2022

Source: Data from Clarksons World Fleet Register (2023)

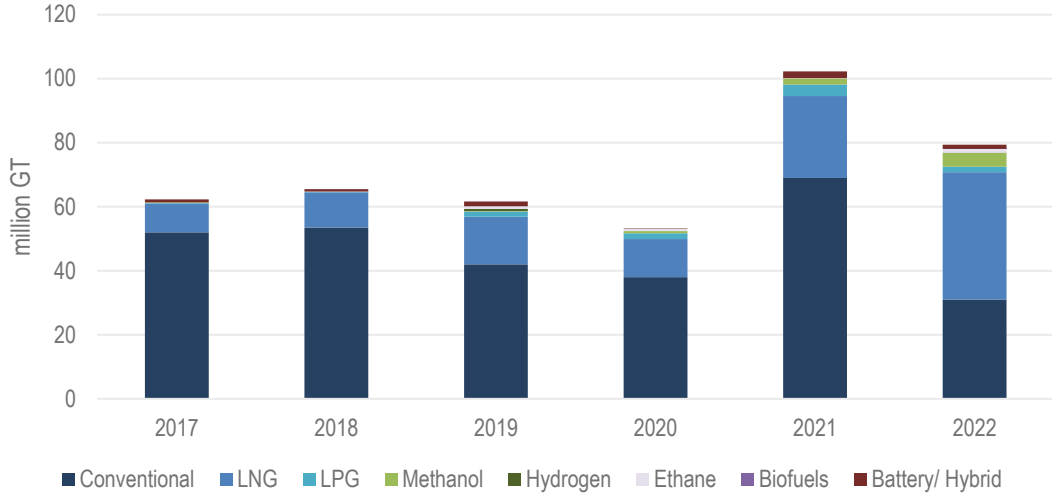


Figure 3. Contracting of vessels by fuel type, from 2017 to 2022

Source: Data from Clarksons World Fleet Register (2023)

Deep dive 3: No Net Zero without SMEs

- SMEs make up for over 50% of CO2 emissions and energy use by the business sector
- Data on SME and climate issues are scarce
- Green entrepreneurs contribute to the technologies needed to achieve climate objectives
- But SMEs face specific challenges in access to finance and skills and are more heavily impacted by regulatory burdens
- Climate policies do not take SME perspectives sufficiently into account

Conclusion

- Industrial decarbonisation key component of reaching climate objectives
- Many initiatives, but urgent need to speed up implementation
- OECD has a leading role in providing data and evidence for effective policy making…
- …and in fostering global cooperation to deliver on this

Thank you for your attention